Space Weather Forecast

Issued on Friday, 05 August 2022 at 12:25 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: No significant activity.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been low over the past 24 hours with isolated Common class flares. There are currently 5 numbered regions on the disc, most appear to be relatively small, weak and magnetically stable. The largest region on the visible disc continues to be AR3068, which remains stable and magnetically simple. A possible Earth-directed CME (coronal mass ejection) was observed from a flare at 05/0744UTC from one of the regions on the southwest quadrant. Analysis of the imagery is ongoing.

Solar Wind / Geomagnetic Activity: Earth is gradually exiting the faster solar winds from a coronal hole on the Sun, with initially slightly elevated solar wind speeds around 460 km/s, which then gradually and erratically declined to around 400 km/s. The strength of the magnetic field was weak, with a brief increase to moderate around 05/0045UTC. The important north-south component mostly fluctuating weakly. Geomagnetic activity was Quiet to Unsettled.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Low solar activity is likely to continue with a slight chance (20%) of a moderate flare. By day 3 another active region is due to rotate from the far side onto the visible disc, and this increases the probabilities..

Solar Wind / Geomagnetic Activity: A possible Earth directed CME has been observed and the imagery has yet to be assessed. Slightly elevated solar winds will continue to gradually decline to slow levels. Then from late tomorrow (6th) a new enhancement in the solar wind is expected to arrive. Therefore geomagnetic activity should remain Quiet with a chance of Unsettled intervals becoming Unsettled to Active later tomorrow and overnight into day 3 (7th), with a slight chance (20%) of an isolated Minor geomagnetic storm interval occurring. Through day 4 (8th) activity is expected to decline to mainly Quiet levels.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to remain at background with no solar radiation storms occurring.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	20	20	10
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	10	20	20	30
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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